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VISCERAL SYPHILIS *

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Visceral syphilis is not limited to the tertiary stage. Lesions of the viscera may occur during the secondary period of syphilis, but visceral syphilis occurs chiefly in the tertiary period.

Clinical evidence of visceral syphilis occurs more frequently in disease of the liver or heart and blood-vessels than of any other organs of the body. Fever of a septic remittent or intermittent type is not an infrequent event. It is not unusual to find chills, fever and sweat resembling malarial fever. Indeed, the fever of visceral syphilis is frequently mistaken for malaria, tuberculosis, typhoid fever or rheumatism. The fever will frequently recur at intervals over years of time. Gummas are usually the source of such fevers and the fact that a gumma may spontaneously heal and disappear, and, especially if the patient is put to rest, is not usually recognized. While the condition may be obscure in these febrile conditions, a thorough examination, including a close survey of the liver and other organs of the body, the serum Wassermann test and the use of mercury and the iodids will frequently clear up the diagnosis.

Syphilis of the respiratory system is not of common occurrence. The trachea, the bronchi and the lung may be involved. A congenital syphilis of the lung in the form of a white pneumonia, described by Virchow, is not of frequent occurrence. Those whose practice is limited to the diseases of children frequently recognize the disease. Usually it is fatal. Acquired syphilitic infection of the trachea, bronchi and the lung is of such infrequent occurrence that it does not come within the experience of the general practitioner and is seen only as a rare event in a rather large hospital practice. Gummas resulting in ulcer or in scars and contraction of the trachea and bronchi are sometimes found and recognized by concurrent evidence of syphilis elsewhere in the body, or by the improvement from the use of antisyphilitic treatment. The symptoms are not at all characteristic, usually consisting of cough and dyspnea with an expectoration free of tubercle bacilli and evidences of other diseases. Acquired syphilis of the lung usually occurs in the form of gummas near the hilum or sometime within a lobe. Cough with chills and an intermittent type of fever, rather profuse expectoration with enlargement of the superficial lymph-glands as well as those of the mediastinum are usually found. The physical examination may simulate that in tuberculosis or in bronchiectasis. The absence of tubercle bacilli in the sputa, the evidence of syphilis through the history of the patient or evidence of syphilis elsewhere and response to antisyphilitic treatment help to verify a diagnosis.

CASE 1.—*Patient.*—I have seen one patient of this kind: H. S., aged 26, Hebrew, single, traveling salesman, presented himself with a complaint of cough, febrile condition, sweats at night, loss of weight and strength, diminished appetite. At first he denied syphilitic taint. Expectoration was rather profuse and contained mucopus, saprophytic bacteria and no tubercle bacilli.

Examination.—There was a relative dulness over the left upper lung, especially in the region of the interlobular fissure behind, increase of tactile fremitus and voice sounds, bronchovesicular breathing and moist râles, both fine and coarse. Lymph-nodes existed in the posterior triangles of the neck, the supratrochlears and other superficial glands enlarged and firm.

The patient was closely questioned because of the presence of the enlarged lymph-nodes of the postcervical region and of the supratrochlear region. Finally, he admitted an acquired syphilis of five years before with only superficial and inadequate treatment.

Treatment and Result.—The use of inunctions of mercury and a moderate dosage of iodids resulted in surprisingly rapid improvement and a final disappearance of all evidence of local lesion and of symptoms. The patient continued on the treatment for a year and remained well.

A chronic bronchopneumonia is said to occur in the lung of a syphilitic type, but the literature does not contain many examples and I have never seen one that I have recognized.

Tertiary syphilis of the alimentary canal is recognized but is rare. Ulcers of the esophagus following a probable gumma, or by extension from ulcerative processes of the pharynx, occur with resulting difficulties in swallowing or the formation of strictures from the scar contraction.

Diffuse acute gastritis is said to occur and also syphilitic ulcer. Nodular gummata of the stomach are rare, but cases are cited, including descriptions of this condition by Simon Flexner.

Enteritis with swelling of the lymph follicles and enlargements of the mesenteric glands occurs rarely. Ulcers may result from follicular enteritis. Gummas may appear in the mucous membrane of the intestine with resulting ulcer and, if healed, with scar contraction and stricture.

The rectum may be infected directly from the vulva or from condylomata. Ulcers of the rectum of syphilitic origin are more common in women than in men.

The spleen may be enlarged in the early stage of syphilis. Gummas of the spleen are common and one of the sources of fever. Cicatrices of healed gummas are frequently found post mortem. Amyloid degeneration of the spleen of syphilitic origin is seen in patients with syphilitic amyloid liver.

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The liver is the most common seat of visceral syphilis. The syphilitic process may consist of a diffuse interstitial hepatitis with enlargement of the organ, which may occur congenitally. In this condition the liver is large, smooth and the cut surface is of a gray yellow appearance. It may appear early and usually is fatal. The same type may occur in later life, most commonly in adolescence associated with other evidences of syphilis in the form of interstitial keratitis, rhagades, Hutchinson's teeth and sometimes with small stature amounting to infantilism.

A diffuse interstitial hepatitis of the acquired type may occur, which partakes frequently of hypertrophic cirrhosis. In this type the liver is enlarged, smooth and sometimes tender to the touch. There may be a moderate jaundice, and fever of the intermittent type is not infrequent associated with chills and sweats. An atrophic cirrhosis with recurring ascites may also occur in acquired syphilis. This may be a later stage of the hypertrophic form. Gummas may appear in the hilum of the organ and by pressure on the portal vessels produce ascites.

The lesion may consist of gummas in the form of tumors measuring from 2 mm. in diameter to the size of a fetal head. They may be single or multiple. These tumor masses may produce enormous enlargement of the organ. There may be jaundice. Usually there is an intermittent or remittent type of temperature with or without chills, and frequently there are night sweats. There may be great tenderness and spontaneous pain. With small gummas the clinical phenomena may last for a variable period and disappear. Recurrences over years of time are not unusual. Lessened strength, endurance and loss of weight and a muddy complexion are of frequent occurrence. Gummas situated near the blood-vessels or gall-bladder may simulate other diseases. The following case is an example:

CASE 2.—*Patient.*—L. S. S., aged 37, railway engineer, contracted lues in 1897. In June, 1898, he noticed dull pain in the border of ribs in the region of gall-bladder. This was aggravated by motion. Sometimes after meals he experienced severe attacks of colicky pain radiating from the right hypochondrium. He had also suffered from chill, fever, sweat and jaundice. There was some nausea with these attacks. The paroxysms of chill, fever, sweat and pain occurred at irregular intervals during 1898 and then there was a period of relatively good health.

Examination.—On Sept. 29, 1899, the patient was first examined. His weight was 145 pounds, a loss of 20 pounds. A slight coating of the tongue. No enlargement of lymph palpable glands. The lungs and heart presented no abnormal condition. The liver was moderately enlarged and easily felt below the costal edge. The border was smooth, rounded, slightly resistant, and very tender to the touch. A mass could be felt in the region of the gall-bladder. The urine (specific gravity 1.020) contained a trace of bile, no albumin, no sugar, no casts. The blood showed no plasmodia; 9,000 leukocytes per c.c.

Operation and Result.—A diagnosis of calculous cholecystitis was made and the patient was sent to Mercy Hospital where he was operated by Dr. Christian Fenger. Multiple gummas of the liver were found; the largest one situated just behind the gall-bladder, which was infected by the gumma. No gall-stones were present. The patient rapidly recovered from the operation and made a rapid improvement with the use of inunctions of mercury followed by potassium iodid. The absence of syphilitic lesions of the superficial glands, skin, etc., and the typical symptoms of gall-stones due to the infection of the gall-bladder from a gumma, led to a wrong diagnosis.

The following cases are examples of gummas of the liver existing for a long period of time and unrecognized:

CASE 3.—*Patient.*—M. E. C., aged 54, presented himself Sept. 2, 1907. He had suffered from malaria while living in the south in 1887. Otherwise had rugged health until two years ago. Then illness developed in the form of fever with a temperature of 101 or more at night, sometimes preceded by chill and in the night the fever disappeared with a sweat. The morning temperature was either normal or subnormal. Medical care did not benefit him. The following summer was spent in Canada at the seashore. During this time the fever disappeared to recur the next fall with purpura of the legs. During this period he took quinin for what was supposed to be malaria, although no plasmodia were found in the blood. Following the purpura, copper-colored pigment spots remained in the skin. The summer of 1906 he spent in Europe and for a part of the time at Vichy, France, where he was sent by a physician of Paris. There the condition improved without anything but general treatment. On the return voyage fever developed, which confined him to his bed during September and October. Then he was up and about again with a return of fever in December, 1906. This relapse of December, 1906, disappeared after general treatment with quinin and rest during January and February, and the patient remained well until July, 1907. Again fever appeared and continued until Sept. 2, 1907, the date of the first examination; then he had fever usually of 101 or more every evening, a normal temperature in the morning and sometimes a chill preceding the temperature of afternoon and a sweat at times in the night. He had lost a great deal in weight, from 178 pounds (maximum) to 132. His appetite was poor, and he was troubled with a good deal of flatulence. The bowels were constipated; patient had had hemorrhoids for years which often bled. He had no disturbance of the urinary tract; denied venereal disease. He used whiskey largely, as much as fifteen drinks a day at times.

Examination.—Patient looked ill and sallow; there was no subcutaneous fat; the muscles were flabby. There were no lymph-gland enlargements. Lungs and heart were normal; spleen palpable at the end of deep inspiration. The liver was tender and enlarged, projecting 2 or 3 cm. below the costal edge; surface smooth excepting at one point where a nodule in the right lobe could be felt. The whole organ was tender to the touch. Stomach tympany extended to the umbilicus. Rectum congested and many hemorrhoidal tumors appeared with the use of the speculum. Urine: a specimen, clear, specific gravity 1.015, acid, a faint trace of albumin, a trace of bile pigment, no sugar, a few hyalin and faintly granular casts. The blood: hemoglobin 70 per cent. (Dare), reds 4,800,000, whites 9,000. No plasmodia were found in either fresh or stained specimens of the blood.

Treatment and Result.—In spite of the fact that the patient denied syphilis, a diagnosis of probable gumma with interstitial hepatitis of syphilitic origin was made and he was treated at the Presbyterian Hospital, Chicago, for about six weeks by the deep intramuscular injections of bichlorid of mercury in the dose of 1/6 to ⅓ gr. given every day or every other day. Following the use of 20 injections of mercury he was given gradually increasing doses of potassium iodid. Under this treatment there was a rapid subsidence of all symptoms and of the evidence of visceral disease. The improvement was phenomenal, the patient rapidly gaining in strength and weight and a full restoration to health. The patient has remained so until the present time. A recent communication from him includes the statement that his weight is the full normal and he is entirely well. Subsequent to his treatment in the Presbyterian Hospital his physician carried out similar treatment at periods during 1908 and 1909.

CASE 4.—*Patient.*—C. K., aged 60, married, railway business, presented himself on Dec. 24, 1904. He had contracted lues fifteen years previously. For ten years he has had disturbance of the stomach in the form of pain in the epigastrium, of a cramping character which came on soon after taking food. The pain sometimes is relieved by an aromatic drink. The pain is dull and sometimes griping in character. Recently he had used a stomach-tube which has diminished

the attacks and usually immediately relieved him. No analyses have been made of the stomach condition. A year before examination he suffered from what was described as ulcer of the mucous membrane of the nose for which he received local treatment and was also given some potassium iodid. Recently, the pain in the epigastrium had recurred and was not relieved by lavage. There was an occasional chill with slight fever and sweat but these febrile attacks were not continuous.

Examination.—The patient's general appearance was healthy, and general nutrition good. There were no palpably enlarged lymph-glands. Throat was normal; lungs negative; the left heart border dulness extended to the left nipple. The apex-beat was normally situated, the heart action regular. The aortic second tone was accentuated. There was no palpable thickening of the blood-vessels. The arterial tension was 140. The liver was palpably enlarged, projecting 5 to 7 cm. below the costal edge. It was smooth, firm and tender to the touch. A distinct mass could be felt in the right lobe near the region of the gall-bladder. The spleen was not palpable. Stomach tympany extended to the umbilicus. Pupillary and patellar reflexes were normal. Temperature was 100.8, pulse 90, respiration normal. Blood: 3,800,000 reds, 60 per cent. hemoglobin (Dare), 17,400 leukocytes with polynuclears predominating. Urine: a specimen, 1.015, acid, trace of albumin, a few hyalin and finely granular casts. A twenty-four-hour urine amounted to 1,000 c.c., specific gravity 1.015. An Ewald meal showed a total acidity of 28, free hydrochloric acid 15, combined 13, no lactic acid, no blood, no increase of leukocytes.

Treatment and Result.—The patient was given deep intramuscular injections of salicylate of mercury in the dose of 1 grain every day or every second day and after twenty injections was given potassium iodid in the dose of 15 to 30 grains, three times a day. Immediate improvement followed the mercurial treatment with a rapid recovery to good health. The patient not only was restored to a good condition of health but all stomach symptoms disappeared and have remained absent to the present time. A recent Wassermann test was negative.

CASE 5.—*Patient.*—F. B. S., a German-American, 38 years of age, a clerk by occupation, presented himself on Jan. 5, 1905. He complained of great general weakness, poor appetite, heaviness and fulness in the stomach after meals, a sense of weight in the right hypochondrium with soreness, pain in the right side and a fever every day in the late afternoon with occasional sweats at night. He had contracted lues fourteen years previously and had taken treatment for it off and on for years.

Examination.—The patient was a man of good physique with poor general nutrition, a muddy complexion with slight yellowness of conjunctiva. The temperature was 100, the pulse 90, no palpable glandular enlargements. The mucous membranes were rather pale, the tongue moderately coated. The throat and lungs were normal. The heart presented no abnormal signs. The liver was distinctly enlarged, projecting 5 or 6 cm. below the costal edge, and was somewhat firm and tender. In the parasternal line there was a distinct mass in the right lobe. The spleen was not palpable. There was a spindle-shaped swelling of the right femur at the junction of the middle and lower thirds. It was nodular, tender and was painful when the patient attempted to walk. An *x*-ray examination of the thigh showed a swelling of the shaft of the bone which involved not only the periosteum but the bone itself. The blood examination showed 63 per cent. hemoglobin (Dare), 4,200,000 reds, 10,000 whites. The urine: 1.015, a trace of albumin and a few hyalin and granular casts.

Treatment and Result.—The patient was treated at the Presbyterian Hospital for three weeks. During this time he was given deep intramuscular injections of 1 grain of salicylate of mercury every day followed by potassium iodid in the dose of 10 to 30 grains three times a day. Immediate improvement followed the use of mercury and continued uninterruptedly until all evidence of disease disappeared and on April 27, three and a half months after he was first seen, he presented no physical evidence of disease and showed a gain in weight of 20 pounds. He has been under observation since then and has had a series of injections of mercury for two periods and the use of the iodid after the injections. He remains entirely well.

Many other cases could be cited, as this form of visceral syphilic is very common.

There can be no question that diffuse interstitial hepatitis of a chronic type is of rather frequent occurrence and when treated in a general way develops into a cirrhotic atrophic type. Early antisyphilitic treatment would in many instances cure such patients. The scarred liver, the result of gummas, or the botryoid liver consisting of deep fissures comprised of dense bands of connective tissue partially or completely separating portions of the liver into small lobules, is usually without symptoms. Such a type of liver usually is a sequel of syphilis of the liver either congenital or acquired, or may be a latent manifestation.

SYPHILIS OF THE KIDNEYS

Syphilitic nephritis is a recognized entity. It usually occurs in the secondary stage, but may develop later. Nephritis of this type is frequently aggravated by the use of both mercury and the iodids. The symptoms and urine condition are those of a chronic parenchymatous or sometimes of the interstitial type of nephritis. Frequently, one is obliged to cease the use of mercury or of the iodids because of the aggravation of the condition brought about by their use.

This is not surprising when one knows that mercury is excreted by the kidney and may be found in the urine as late as one year after the use of that drug, especially by the intramuscular injection method. Syphilitic nephritis may lead to an early death, may develop into a chronic type and continue as ordinary nephritis even when all syphilitic disease is apparently eliminated.

Amyloid kidney is of syphilitic origin, is of rare occurrence and gummas of the kidney are rare.

SYPHILIS OF THE HEART AND BLOOD-VESSELS

The toxin of syphilis falls with unusual severity on the heart and blood-vessels. The morbid phenomenon occurs in the following forms:

1. In the form of nodular para-arteritis which may involve any of the small arteries of the body, but occurs most frequently in the arteries of the circle of Willis.

2. As an acute gummatous endarteritis of vessels of medium size and sometimes of large ones of the brain and also of the aorta. This is the type in which perforation of the arterial wall may occur and when it involves the aorta results in sudden death.

Such a case I have had in a man 37 years of age, who suffered from syphilis eight years before. He had inadequate treatment because he would not submit to the necessary discipline and consequently suffered from frequent manifestations of syphilis, especially of the bones of the legs, head, etc. Without evidences of circulatory disease he suddenly developed dyspnea and in attempting to walk up a moderate-sized hill was seized with great pain in the precordium with a sense of suffocation and died within a few hours. Post-mortem revealed perforation of the aorta in the first portion of the arch and hemorrhage into the pericardium. The perforation was due to gummatous endarteritis.

3. Obliterative endarteritis involving small blood-vessels of the brain and elsewhere of the body, especially of the coronaries. This condition of the coronary arteries

frequently results in fibrous myocarditis and development of heart inadequacy and with anginal attacks in the young, sudden deaths may supervene.

4. Syphilitic arteritis usually confined to the larger blood-vessels and especially to the root of the aorta and manifested by the easily recognizable changes in the intima and media. Gumma may occur in the heart-wall and interfere with the conductivity of the muscular fibers. It may appear in the bundle of His and cause heart-block.

RELATION OF SYPHILIS OF BLOOD-VESSELS TO ANEURYSM

It has been estimated that from 20 to 80 per cent. of aneurysms are related to syphilitic disease of blood-vessels. This occurs because of the effect of the syphilitic toxin on the intima, frequently resulting in a splitting of that coat and an undermining of the wall of the blood-vessel in consequence. The general nutrition of the coat of the vessel is further diminished by a not infrequent obliterative endarteritis of the vasa vasorum. A general syphilitic arteritis most frequently affects the root and arch of the aorta and consequently aneurysms are most frequent in that part of the circulatory apparatus. Aneurysm may appear long after the initial infection. In recent time the *Spirochæta pallida* has been found in late syphilitic lesions of the aorta and explains the progressive nature of such lesions and resulting aneurysm.

The heart itself may show lesions in the form of verrucose endocarditis. The aortic valves may be involved with resulting aortic insufficiency. Not infrequently in this condition the coronary vessels are involved with resulting myocarditis and anginal attacks.

Syphilis of the heart and of the blood-vessels may be modified by antisyphilitic treatment, but unfortunately the good results of such treatment on other organs is not so fully realized.

DIAGNOSIS OF VISCERAL SYPHILIS

This may be difficult at times and especially diagnosis of the lesion of organs which are rarely involved. The more commonly involved organs, the heart, blood-vessels, liver, spleen and kidneys, present evidences of syphilitic disease which may be very obscure, and on the other hand may be easily recognized.

The presence of a septic temperature of a remittent or intermittent type, associated with chill, fever, sweat, occurring at irregular periods with intervals of latency manifested by improvement and apparent health, should arouse one's suspicions of syphilis. The condition may be mistaken for tuberculosis or malaria more frequently than any other febrile condition. The fact that so many people deny syphilis and that others are ignorant of the presence of the infection makes it a little more difficult. I think, however, that one should not consider such negative evidence. If a most careful examination fails to show positive evidence of syphilis, one may utilize the Wassermann serum test and the mercury-iodid therapeutic test with satisfactory results as a rule. Careful blood examinations will exclude malaria, and the tuberculin test may be used in afebrile conditions with comparatively satisfactory results.

The prognosis of visceral syphilis will vary with the condition. A thoroughly carried out treatment in syphilis of the liver of the acquired form is usually very satisfactory. In disease of the kidney one may modify the condition, but the damage done to this important organ prevents entire recovery. Syphilis of the myocardium may be also benefited by mercury and the iodids; and gummas of the heart, if not destructive of some important part like the bundle of His, may be dissipated by medication. Syphilis of blood-vessels of all types may be improved by brisk mercurial and maximum iodid treatment, but one is never sure of the result until the medication has been tried. In aneurysm, progressive disease of the blood-vessels due to latent syphilis may be somewhat modified by specific treatment, but a damaged blood-vessel cannot be restored to its original condition.

TREATMENT

Mercury remains the best specific medication in syphilis of all stages. It may be used by mouth, by inunction, by deep intramuscular injection or intravenously. The deep intramuscular injections offer a most satisfactory and easily controlled method of giving a maximum amount of the drug. I think that it is the consensus of opinion that the drug should be administered for periods of from fifteen to twenty-five injections, daily or every second or third day and repeated again after an interval of three or four months until the patient is cured. The iodids are of value to dissolve and throw out of the body the morbid material of syphilitic infection. The iodids are of special value in gummatous disease. The dose may be small and give satisfactory results in some instances, and in others it must be maximum amounting sometimes to 300 or 400 grains in twenty-four hours. The drug should be administered at periods like the mercurial treatment. In my experience the best results are obtained by using the iodid in periods when the mercury is not used. Salivation is less likely to occur than when the two are used coincidently.

Salvarsan is undoubtedly of great value in early syphilis and in syphilis with gummatous infiltration and ulceration. The fact that it will aggravate the morbid condition of a heart, blood-vessel or a kidney disease prohibits its use in those conditions. The fact that the best results are obtained in maximum dose by the intravenous method makes its use limited because of difficulty of giving it excepting by those who have a proper technic. A maximum dose of salvarsan followed by mercury is of undoubted value.

Mercury and the iodids have long been used with great satisfaction and we may continue to use them with gratifying results. I doubt very much if salvarsan will give us any better results than the rational use of mercury and iodids. Exceptions may occur in which salvarsan may prove a better remedy. The discovery of salvarsan and its undoubted specific effect on the spirilla warrants the hope that other drugs may be found of even greater specific action in syphilis and other diseases caused by these organisms.

122 South Michigan Boulevard.

Insurance of Babies Against Tuberculosis.—The Danish post-office official who is said to have first suggested the use of Christmas stamps to raise money for the campaign against tuberculosis, now proposes another scheme for the same purpose, namely, the insurance of infants against tuberculosis. On the birth of every child its parents are to pay 25 cents as insurance against tuberculosis. If the child should happen to develop tuberculosis it is to be entitled to free treatment at the age of 6 in the institutions founded by the insurance money. As the sale of Christmas stamps in Denmark is so satisfactory, there is no question of adopting Mr. Holbll's suggestion there, but it is heralded in the Italian journal, *Tubercolosi*, as a "happy idea from Denmark," and our exchange adds that the national league in Sweden against tuberculosis proposes to adopt the insurance scheme, the local authorities paying the single premium at need.